Mechanical BiRotor

Model B050	[2"]
Model B054	[2"]
Model B055	[2"]
Model B058	[2"]

General

The BiRotor Meter is a positive displacement meter utilized in the most demanding applications requiring accuracy, long life and ruggedness.

The Mechanical BiRotor Meter utilizes the exclusive BiRotor principle. There are no sliding, oscillating, or reciprocating

Accuracy

The Mechanical BiRotor's accuracy is attained by the unique BiRotor design which features two finely balanced rotors. An adjustor, incorporated on the meter, is used to assure maximum accuracy within the meter's flow range.

Dependability

There is no metal to metal contact between the rotors and the measurement chamber. The meter is therefore extremely durable. The rotors, bearings and timing gears are the only moving parts. Maintenance requirements are the lowest in the industry.

Affordability

In spite of its superior performance, Brodie can offer the Mechanical BiRotor at a very competitive price.

Principle of Operation

The two spiral fluted rotors within the measuring unit are dynamically balanced to minimize bearing wear. (Refer to Figure 1). As the product enters the intake of the measuring unit, the two rotors divide the product into precise segments of volume momentarily and then return these segments to the outlet of the measuring unit. During this "liquid transition", the rotation of the two rotors is directly proportional to the flow rate of the liquid thruput. A gear train located outside the measuring unit chamber conveys mechanical rotation of the rotors to a mechanical or electronic register for totalization of liquid thruput.

Design Features

- Extremely long service life
- Economical low maintenance
- Two simple rotors with no metal-to-metal contact are the only moving parts in the measuring chamber.
- No oscillating, reciprocating or sliding parts or cranks to wear or disturb the balanced rotary.
- Conforms with International standards of flowmeter accuracy.

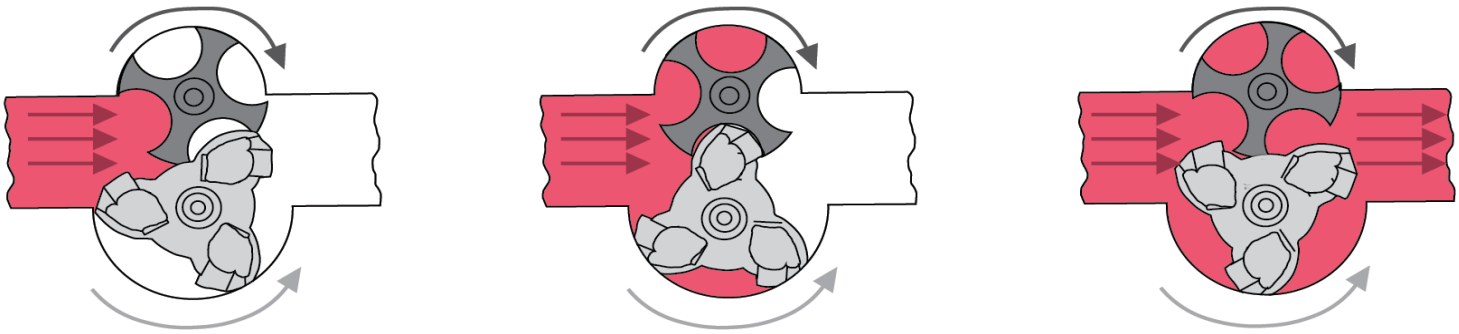


Figure 1 - BiRotor Meter Principle of Operation Diagram

Accessories

- Preset Counters
- Control Valves
- Large Numerical Registers
- Strainers
- Pulse Transmitters
- Ticket Printers

Materials of Construction

Housing:	Welded Steel Construction Combining Steel Castings and Drawn Steel Plate
Measuring Unit:	
Rotors:	Aluminum (Standard
Rotor Shafts:	E.T.D 150
Rotor Bearings:	Stainsless Steel
Body and End Covers:	Cast Iron
Counter Base Plate:	
Body:	Steel
O-Ring:	Viton (Standard)
Drive Shafts:	Stainless Steel
Drive Gears:	Stainless Steel
Ball Bearings:	Stainless Steel

Flow Ranges

Meter Models: B050, B054, B055, B058		Viscosity							
		1.25 cSt.		6.25 cSt.		25 cSt.		125 cSt.	
		Accuracy		Accuracy		Accuracy		Accuracy	
		+/- 0.25%	+/- 0.50%	+/- 0.25%	+/- 0.50%	+/- 0.25%	+/- 0.50%	+/- 0.25%	+/- 0.50%
GPM	150	30	C/F	15	C/F	3	C/F	2	C/F
LPM	567	113	C/F	57	C/F	12	C/F	6	C/F
BPH	214	44	C/F	22	C/F	5	C/F	3	C/F

Max Working Pressure [at 100 F, 38 C]

Model	Connections	Max PSI	DIN Connections	Max Bar
B050	2" 150 lb. ANSI	150	DN 50 PN 16	10.3
B054	2" 300 lb. ANSI	740	DN 50 PN 40	40
			DN 50 PN 64	51
B055	2" 600 lb. ASI	1480	DN 50 PN 64	64
			DN 50 PN 100	100
B058	2" NPT Companion	150	-	10.3

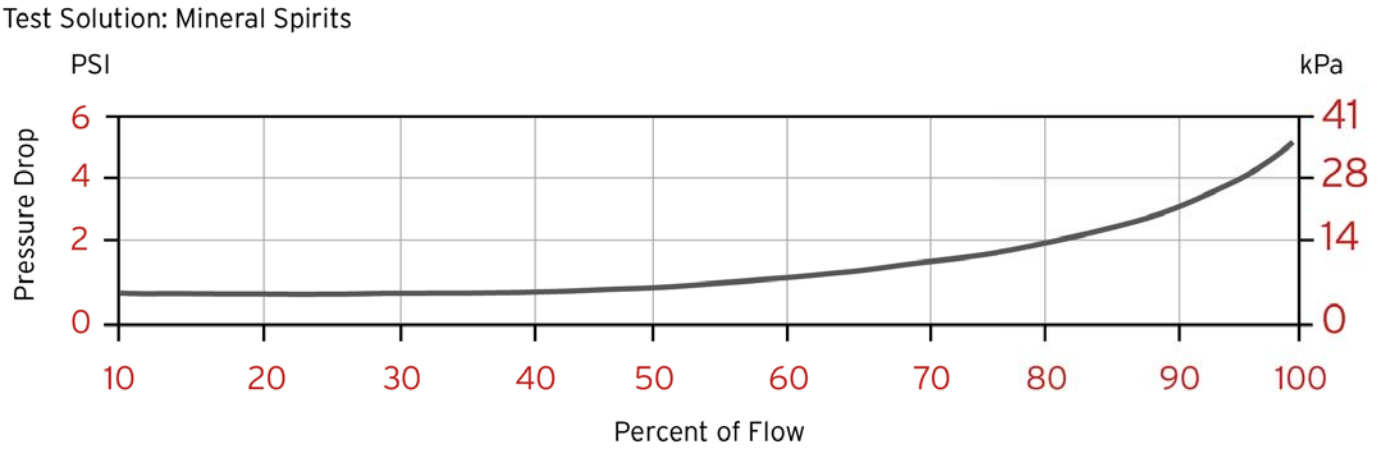
Temperature Range: -20F to 150F (-29C to 66C) Optional 450F (232C)

To convert pressure drop value to the actual process fluid, use the following equation:

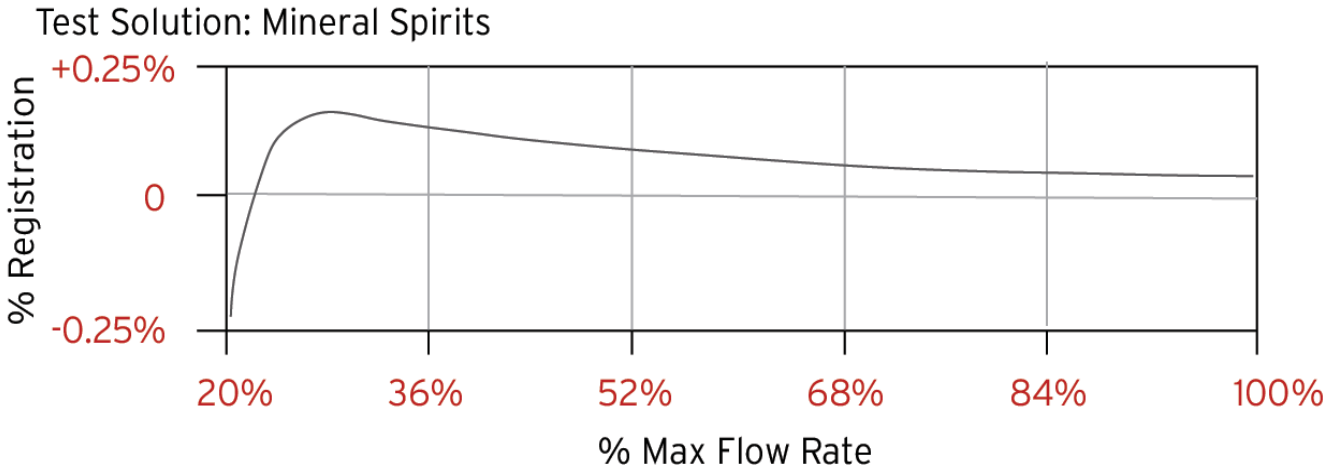
$$\text{Delta PA} = (\text{cPA})^{0.25} * (\text{SGA})^{0.75} * \text{Delta Pm}$$

Delta PA = Pressure Drop on Actual Fluid in PSI
cPA = Viscosity of Actual Fluid in cP
SGA = Density of Actual Fluid in SG
Delta Pm = Pressure Drop on Mineral Spirits
(See Graphs below for Reference)

Pressure Drop



Accuracy



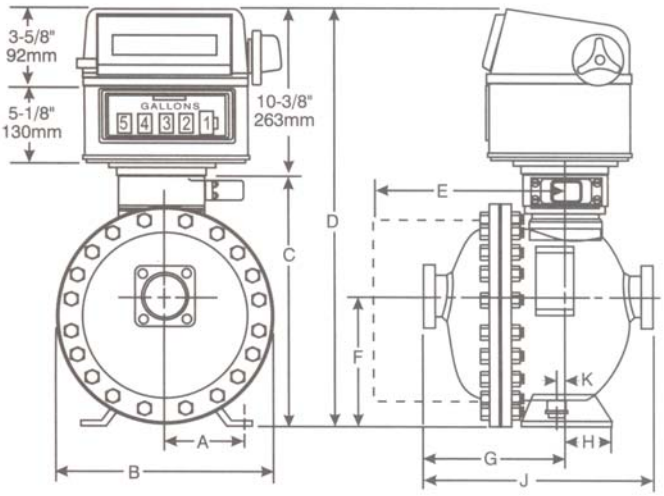
Capable of +/- 0.15%; Contact Factory for viscosity corrections.

Shipping Weights and Volume

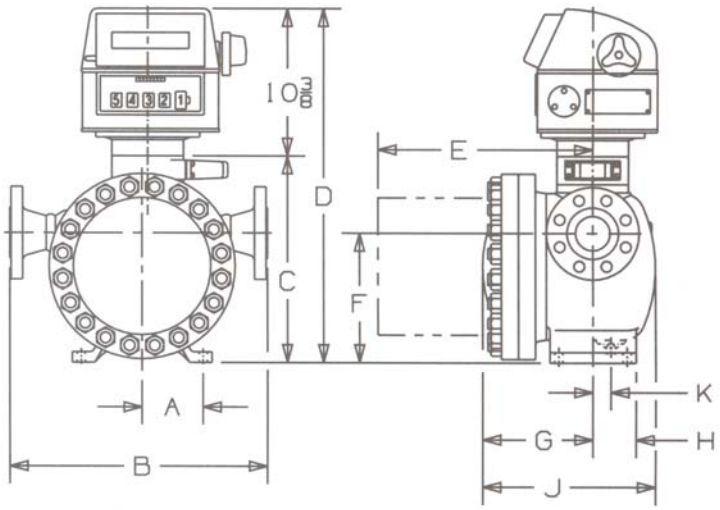
*For Certified Dimensional Prints - Consult Factory

Model	Weight	Volume
B050	75 lb	1.7 ft^3
	34 kg	0.05 m^3
B054	195 lb	2.6 ft^3
	88 kg	0.07 m^3
B055	213 lb	2.7 ft^3
	97 kg	0.07 m^3
B058	75 lb	1.7 ft^3
	34 kg	0.05 m^3

Dimensions



Models B050, B058



Models B054, B055

Model		Dimensions									
		A	B	C	D	E	F	G	H	J	K
B050	mm	106	286	332	595	330	165	175	52	292	6
	inches	4 1/8	11 1/3	13 1/8	23 7/16	13	6 1/2	6 7/8	2 1/16	11 1/2	1/4
B054	mm	108	451	332	632	381	230	195	60	306	16
	inches	4 1/14	18	13 1/8	24 7/8	15	9 1/16	7 3/4	2 3/8	12	5/8
B055	mm	108	451	332	632	381	230	195	60	306	16
	inches	4 1/14	18	13 1/8	24 7/8	15	9 1/16	7 3/4	2 3/8	12	5/8
B058	mm	106	286	332	595	330	165	175	52	292	6
	inches	4 1/8	11 1/3	13 1/8	23 7/16	13	6 1/2	6 7/8	2 1/16	11 1/2	1/4

NOTE:
Do NOT operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

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